

What is claimed is:

1. A method of reducing processing power requirements of a video decoder that receives and decodes incoming video data, the method comprising:

determining a throttling amount based on at least one of a measure of computational processing power required to decode at least one bitstream of the video data and a measure of the decoder's processing capabilities; and

controlling computational processing requirements of the decoder, based on the throttling amount, comprising reducing an amount of processing performed on the decoded video data prior to displaying a picture comprising the decoded video data.

2. The method according to claim 1, wherein reducing the amount of processing comprises limiting a function of at least one post filter.

3. The method according to claim 1, wherein reducing the amount of processing comprises limiting a function of at least one format conversion filter.

4. The method according to claim 1, wherein the measure of the computational processing power required to decode the at least one bitstream comprises at least one of:  
an indication of syntax elements in the bitstream;  
an indication of a type of processing required for the bitstream;  
an indication of an amount of processing required for the bitstream; and  
a combination of the type and the amount of processing required for the bitstream.

5. A system for dynamically processing incoming video data comprising:  
a video decoder that receives and decodes the video data; and  
a decoder throttling device that determines a throttling amount based on at least one of a measure of computational processing power required to decode the video data and a measure of a processing capability of the decoder;

wherein the decoder throttling device provides the throttling amount to the decoder,

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which reduces an amount of processing performed on the decoded video data prior to displaying a picture comprising the decoded video data, in accordance with the throttling amount.

5 6. The system according to claim 5, further comprising at least one post filter, the decoder reducing the amount of processing by limiting functions of the at least one post filter.

7. The system according to claim 5, further comprising at least one format conversion filter, the decoder reducing the amount of processing by limiting functions of the at least one format conversion filter.

10 8. The system according to claim 5, further comprising a bitstream indicator extractor device that measures the computational processing power required to decode at least one bitstream of the video data by at least one of:

measuring an indication of syntax elements in the bitstream;

measuring an indication of a type of processing required for the bitstream;

15 measuring an indication of an amount of processing required for the bitstream; and

measuring a combination of the type and the amount of processing required for the bitstream.

9. A method of reducing processing power requirements of a video decoder that receives and decodes incoming video data, the method comprising:

20 determining a throttling amount based on at least one of a measure of computational processing power required to decode at least one bitstream of the video data and a measure of the decoder's processing capabilities; and

controlling computational processing requirements of the decoder, based on the throttling amount, comprising reducing a number of coefficients inverse quantized and inverse DCT transformed by selectively setting coefficients to alternate values.

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10. The method according to claim 9, wherein the alternate values comprise zero.

11. The method according to claim 9, wherein the measure of the computational processing power required to decode the at least one bitstream comprises at least one of:

an indication of syntax elements in the bitstream;

an indication of a type of processing required for the bitstream;

an indication of an amount of processing required for the bitstream; and

a combination of the type and the amount of processing required for the bitstream.

12. A system for dynamically processing incoming video data comprising:

a video decoder that receives and decodes the video data; and

a decoder throttling device that determines a throttling amount based on at least one of a measure of computational processing power required to decode the video data and a measure of a processing capability of the decoder;

wherein the decoder throttling device provides the throttling amount to the decoder, which reduces a number of coefficients inverse quantized and inverse DCT transformed by selectively setting coefficients to alternate values, in accordance with the throttling amount.

13. The system according to claim 12, further comprising a bitstream indicator extracting device that measures the computational processing power required to decode at least one bitstream of the video data by at least one of:

measuring an indication of syntax elements in the bitstream;

measuring an indication of a type of processing required for the bitstream;

measuring an indication of an amount of processing required for the bitstream; and

measuring a combination of the type and the amount of processing required for the bitstream.

14. A method of reducing processing power requirements of a video decoder that

receives and decodes incoming video data, the method comprising:

determining a throttling amount based on at least one of a measure of computational processing power required to decode at least one bitstream of the video data and a measure of the decoder's processing capabilities; and

controlling computational processing requirements of the decoder, based on the throttling amount, the controlling the computational processing requirements comprising:

comparing two temporal references corresponding to two motion vectors of a picture of the video data being decoded;

determining which one of the two motion vectors has a closer temporal distance from the picture being decoded, based on the temporal references; and

processing only the one of the two motion vectors having the closer temporal distance.

15. The method according to claim 14, in which the two temporal references comprise forward references.

16. The method according to claim 14, in which the two temporal references comprise a forward reference and a backward reference.

17. The method according to claim 14, wherein the measure of the computational processing power required to decode the at least one bitstream comprises at least one of:

an indication of syntax elements in the bitstream;

an indication of a type of processing required for the bitstream;

an indication of an amount of processing required for the bitstream; and

a combination of the type and the amount of processing required for the bitstream.

18. A system for dynamically processing an incoming video data comprising:

a video decoder that receives and decodes the video data;

a decoder throttling device that determines a throttling amount based on at least one

of a measure of computational processing power required to decode the video data and a measure of a processing capability of the decoder; and

a bitstream indicator extracting device that extracts two temporal references associated with two motion vectors of each picture to be decoded by the video decoder;

5 wherein the decoder throttling device provides the throttling amount to the decoder, which processes, for each picture, only one of the two motion vectors having a closer temporal distance from the picture being decoded, based on a comparison of the two temporal references associated with the two motion vectors.

10 19. The system for dynamically processing an incoming video data according to claim 18, wherein each picture from which the two temporal references are extracted comprises a B-picture.

20. The system according to claim 18, the bitstream indicator extracting device further measures the computational processing power required to decode at least one bitstream of the video data by at least one of:

15 measuring an indication of syntax elements in the bitstream;  
measuring an indication of a type of processing required for the bitstream;  
measuring an indication of an amount of processing required for the bitstream; and  
measuring a combination of the type and the amount of processing required for the bitstream.